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Some comparative effects of disconnecting the cerebral hemispheres. M. S. Gazzaniga and R. W. Sperry, Division of Biology, California Institute of Technology, Pasadena, California.

Studies on effects of sectioning the cerebral commissures in cat, monkey, and man show certain differences indicative of evolutionary trends. Tendency to form double engrams, one in each hemisphere during normal learning appears strongest in cat, intermediate in monkey, but is largely overcome in man. Significant shifts in mnemonic functions of corpus callosum are indicated. Closely related differences are also evident in respect to functional symmetry and intrinsic performance capacity of the separated hemispheres. The dominant hemisphere of commissurotomized man is close to normal in most tests, whereas the other is mute, agonistic*, and generally inferior except in a few tests, e.g. visual constructional tasks. Other comparative differences are seen in regard to cortical motor control of the homolateral forelimb during and after visual learning that involves only one of the disconnected hemispheres. The intermediate position of the monkey in this latter respect has also been demonstrated in recent studies. (Supported by NIH grant MH-03371 and F. P. Hixon Fund).

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*Findings on a second patient show considerable comprehension exists in the non-dominant hemisphere but that such an experience never elicits an audible verbal report.